DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BEAR HILL POND	Lake Area (ha):	13.23
Town: ALLENSTOWN	Maximum depth (m):	7.0
County: Merrimack	Mean depth (m):	2.4
River Basin: Merrimack	Volume (m³):	317500
Latitude: 43°06'49" N	Relative depth:	1.7
Longitude: 71°21'57" W	Shore configuration:	1.63
Elevation (ft): 666	Areal water load (m/yr)	: 2.40
Shore length (m): 2100	Flushing rate (yr^{-1}) :	1.00
Watershed area (ha): 64.2	P retention coeff.:	0.78
<pre>% watershed ponded: 0.0</pre>	Lake type: art	ificial

BIOLOGICAL:	20 February 1997	18 July 1996
DOM. PHYTOPLANKTON (% TOTAL) #1	DINOBRYON 85%	FILAMENTOUS GREENS 50%
#2	SYNURA 15%	TABELLARIA 35%
#3		
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		1.33
DOM. ZOOPLANKTON (% TOTAL) #1	ASPLANCHNA 51%	POLYARTHRA 24%
#2	KERATELLA 28%	KERATELLA 21%
#3	NAUPLIUS LARVA 14%	ASPLANCHNA 16%
ROTIFERS/LITER	136	35
MICROCRUSTACEA/LITER	34	23
ZOOPLANKTON ABUNDANCE (#/L)	170	58
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		5.5
BOTTOM DISSOLVED OXYGEN (mg/L)	8.6	0.9
BACTERIA (E. coli, #/100 ml) #1		< 1
#2		
#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None Hypolimnion volume (m³): None

Anoxic volume (m^3) : 3900

CHEMICAL:			BEAR HILL ALLENSTOW			
	20 Febru	lary 1997	18 J	uly 1996		
DEPTH (m)	2.0	5.0	2.0			4.0
pH (units)	4.6	4.6	4.5			4.5
A.N.C. (Alkalinity)	-1.2	-0.6	-1.3			-1.3
NITRATE NITROGEN	0.05	0.05	< 0.05		<	0.05
TOTAL KJELDAHL NITROGEN	0.28	0.39	< 0.10		<	0.10
TOTAL PHOSPHORUS	0.012	0.012	0.005			0.014
CONDUCTIVITY (µmhos/cm)	28.1	27.9	25.5		2	26.7
APPARENT COLOR (cpu)	17	15	< 5			5
MAGNESIUM			0.18			
CALCIUM		othe to	< 1.0			
SODIUM			1.2			
POTASSIUM			< 0.40			
CHLORIDE	< 2	< 2	2			2
SULFATE	5	5	5			5
TN : TP	28	37				
CALCITE SATURATION INDEX						

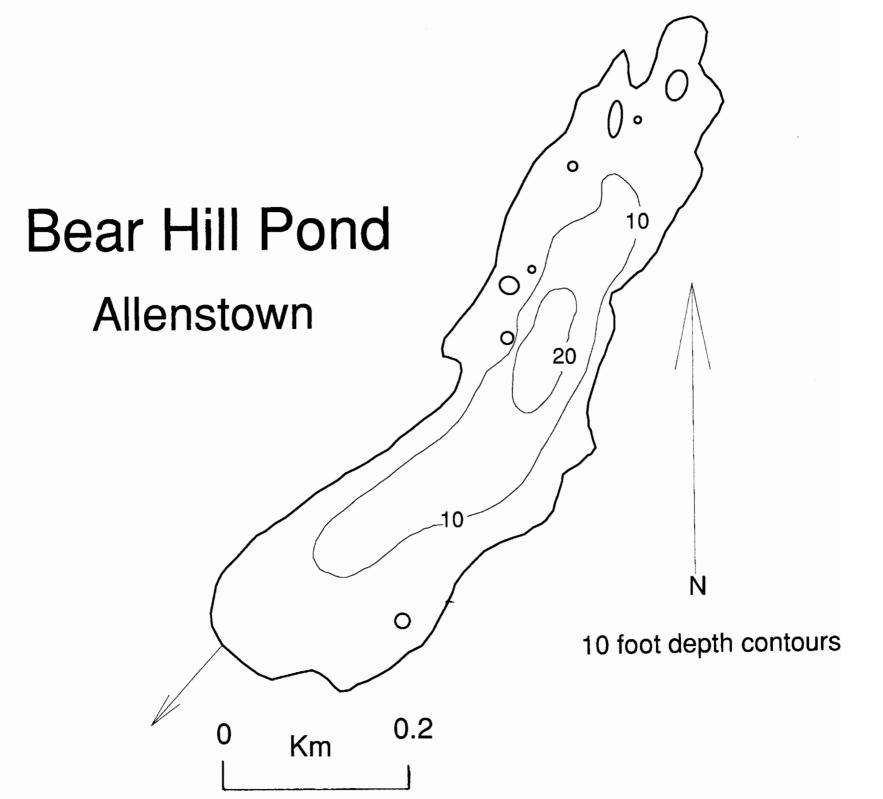
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1996

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	1	3	0	4	Oligo.

COMMENTS:

- 1. Bear Hill Pond is a manmade pond located within Bear Brook State Park.
- 2. It is a clear, acid pond with no buffering capacity (no alkalinity).
- 3. The plankton (both phytoplankton and zooplankton) were more abundant in the winter than in the summer (unusual). The summer net phytoplankton were not only sparse but were unhealthy looking and were primarily fragments of filamentous green algae with deteriorating or shriveled chloroplasts. Filamentous greens frequently dominate acid-stressed ponds.



FIELD DATA SHEET

TOWN: ALLENSTOWN

LAKE: BEAR HILL POND DATE: 07/18/96 WEATHER: MOSTLY SUNNY, HOT, LT BREEZE

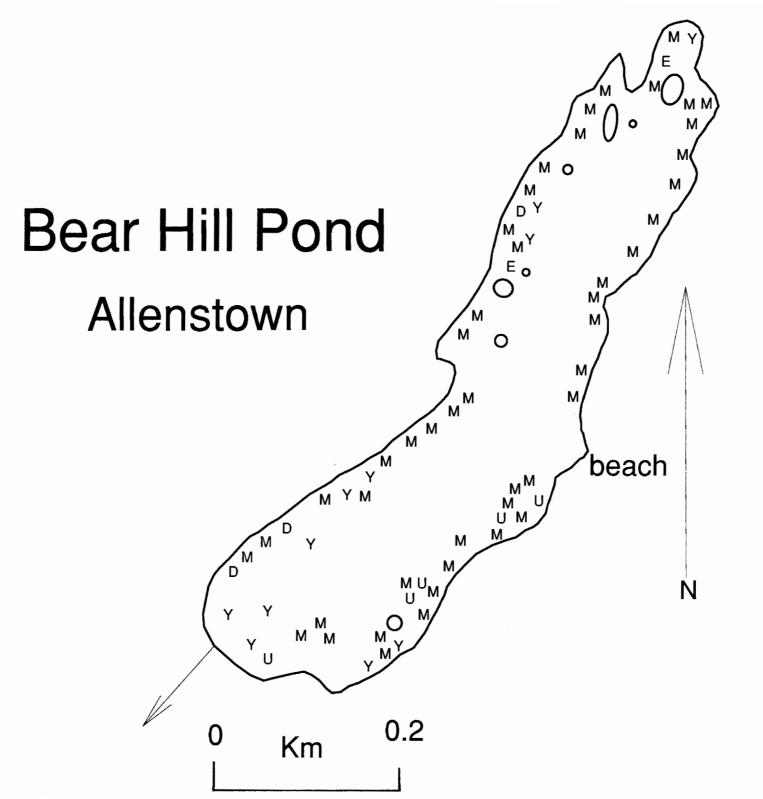
DATE: 0//18/96	WEATH	HER: MOSTLY SUNNY,	HOT, LT BREEZE
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	25.7	8.2	101 %
1.0	25.3	8.3	101 %
2.0	24.9	8.1	98 %
3.0	24.6	8.1	98 %
4.0	23.7	7.5	88 %
5.0	22.8	7.2	84 %
6.0	18.2	0.9	10 %

COMMENTS: SECCHI DISK (m): 5.5

BOTTOM DEPTH (m): 6.6

TIME: 1230

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY LAKE: BEAR HILL POND TOWN: ALLENSTOWN DATE: 07/18/96 PLANT NAME Key ABUNDANCE **GENERIC** COMMON Y Nuphar Yellow water lily Scattered Utricularia U Bladderwort Scattered M Myriophyllum humile Water milfoil Common E Eriocaulon septangulare Pipewort Sparse D Decodon verticillatus Swamp loosestrife Sparse

OVERALL ABUNDANCE: Common

GENERAL OBSERVATIONS:

- 1. Native milfoil was very common along the bottom of the pond.
- 2. The overall abundance was due to the bottom milfoil growth. Emergent and floating-leaf plants were scattered.